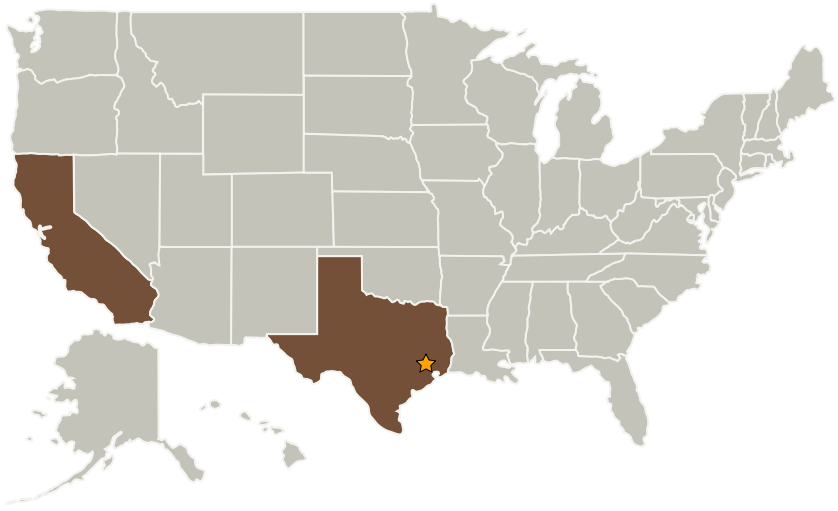
Wearable Beat to Beat Blood Pressure Monitor, Phase I

Completed Technology Project (2008 - 2008)

Project Introduction

A key component of NASA's human exploration programs is a system that monitors the health of the crew during the space missions. The wearable physiological monitor proposed by Linea Research Corporation can be used to continuously observe the beat to beat blood pressure. The monitor can be used to observe the physiological effect of various countermeasures against prolonged exposures to reduced gravitational environments. The proposed device will allow the monitoring of the pharmacological effect on blood pressure over prolonged periods. Currently, beat to beat monitoring of blood pressure is done primarily in hospital settings through invasive procedures involving percutaneous insertion of catheters into the radial or brachial arteries. While non-invasive beat to beat blood pressures based on either the Penaz method or arterial applanation tonometry are currently available, they each have limitations. In addition, all monitors are based on large stationary equipment that requires the subject to be immobile. Successful implementation of the proposed program will result in an accurate wearable beat to beat blood pressure measurement.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Johnson Space Center (JSC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Johnson Space Center(JSC)	Lead Organization	NASA Center	Houston, Texas
Linea Research Corporation	Supporting Organization	Industry	Palo Alto, California

Primary U.S. Work Locations	
California	Texas

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Yong Jin Lee

Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
  - TX06.3 Human Health and Performance
    - TX06.3.4 Contact-less / Wearable Human Health and Performance Monitoring